

## **Remarks and Arguments**

### Amendments to the Claims

Claims 1, 2, 4-6, 10, 21, and 37 to 45 are canceled without prejudice.

Claim 3 has been amended to incorporate the feature of recited in previously pending claim 10. Various amendments are made to claims 3, 11, 12, 18 to 20 to improve their form, to preserve proper dependency, and/or to preserve proper antecedent basis.

Claim 46 is newly added. Support for this claim is found throughout the application as filed, for example in paragraphs [0056] and [0131].

No new matter is added as a result of the present amendments. Each of the present amendments to the claims is made without prejudice. Applicants expressly reserve the right to pursue any subject matter canceled as a result of the present amendments in future prosecution, either in this application or in one or more further applications that claims priority under 35 U.S.C. § 120 from this application.

### Amendments to the Specification

The Examiner objected to the disclosure since the Brief Description of the Figure refers to entities DT1, DT2, and DT3, while Figures 2 and 3 refer to entities 1, 2, and 3. Paragraphs [0031] and [0032] have been amended to conform with the labeled entities in the Drawings.

### Rejections under 35 U.S.C. §102

#### *Balasubramanian*

Claims 3, 7-9, 16 and 18 were rejected under 35 U.S.C. § 102(b) as being anticipated by WO98/48048 to Balasubramanian et al. ("Balasubramanian"). The Examiner asserts that the instant claims are drawn to "a multi-component detection system comprising three fluorescently tagged groups capable of interacting with each other" and that Balasubramanian teaches systems comprising FAM, TMR and ROX labeled nucleotide probes. The Examiner further asserts that "it is well known that the fluorescence emission spectra of FAM overlaps with absorption spectra of both TMR and ROX; the fluorescence emission spectra of TMR overlaps with the absorption

spectra of ROX; and that modern fluorescence spectrometers can be adjusted to excite all three fluorophores.” Applicants traverse this rejection.

Without conceding the merits of this rejection, Applicants have amended independent claim 3 to recite that external stimuli are applied to directly or indirectly modulate the association of interacting groups. Balasubramanian does not teach or suggest aspect. Consequently, amended independent claim 3 is novel over Balasubramanian. Each of the remaining claims depends directly or indirectly from independent claim 3. As such, each of the dependent claims is also novel over Balasubramanian.

Applicants thus respectfully request that the rejection under 35 U.S.C §102(b) based on Balasubramanian be withdrawn.

Liu and Lu

Claims 3, 7-9, 16, 18 and 20 were rejected under 35 U.S.C. § 102(b) as being anticipated by Liu and Lu (“Liu and Lu”). The Examiner asserts that Liu and Lu use FRET to study the structure and dynamics of triply labeled DNazymes. Liu and Lu teach a combination of fluorophores that allows FRET between the first and both of the other fluorophores as well as FRET between the second and third fluorophores. Applicants traverse this rejection.

Without conceding the merits of this rejection, Applicants have amended independent claim 3 to recite that external stimuli are applied to directly or indirectly modulate the association of interacting groups. Liu and Lu do not teach or suggest aspect. Consequently, amended independent claim 3 is novel over Liu and Lu. Each of the remaining claims depends directly or indirectly from independent claim 3. As such, each of the dependent claims is also novel over Liu and Lu.

Applicants thus respectfully request that the rejection under 35 U.S.C §102(b) based on Liu and Lu be withdrawn.

The Amersham Application

Claims 3, 7-9, 16 and 18 were rejected under 35 U.S.C. § 102(a) as being anticipated by WO2004/029579 (“the Amersham application”). The Examiner asserts that the Amersham

application teaches fluorescent labeling reagents with multiple donors and acceptors. Applicants traverse this rejection.

Without conceding the merits of this rejection, Applicants have amended independent claim 3 to recite that external stimuli are applied to directly or indirectly modulate the association of interacting groups. The Amersham application does not teach or suggest aspect. Consequently, amended independent claim 3 is novel over the Amersham application. Each of the remaining claims depends directly or indirectly from independent claim 3. As such, each of the dependent claims is also novel over the Amersham application.

Applicants thus respectfully request that the rejection under 35 U.S.C §102(b) based on the Amersham application be withdrawn.

#### Rejections under 35 U.S.C. §112

Claims 3, 7, 8-20 and 22-36 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. In particular, the Examiner asserts that claim 3 has several aspects that are indefinite. Applicants traverse this rejection, and address the specific rejections in the order they were presented.

#### *"Interacting Group"*

First, the Examiner asserts that there is no definition of the phrase "interacting group." Applicants provide a definition of this phrase in paragraph [0110] of the specification, which definition is provided below for the Examiner's convenience:

[0110] The term "interacting group" or "IG" as used herein encompasses compounds, proteins, protein domains, protein loops, protein-termini, peptides, hormones, protein-lipid complexes, lipids, carbohydrates, carbohydrate-containing compounds, nucleic acids, oligonucleotides, pharmaceutical agents, pharmaceutical drug targets, antibodies, antigenic substances, viruses, bacteria, and cells or any complex thereof. Essentially, the interacting group is an entity capable of forming a complex with one or more entities. For example, an antibody in context with the present invention would be a first IG in that it is capable of forming a complex with an antigen, wherein the antigen would be the second IG (see *infra*). Another example of an IG of the present invention would be a ligand, which is capable of forming a complex with a receptor. A further example is the interaction of an enzyme with its substrate. Additionally, the IGs may be part of the same molecule. Accordingly, for example, the third intracellular loop of a G-protein coupled receptor could be a first IG and the C-terminus of the same receptor could be a second IG which would associate when the receptor is activated or inactivated.

Thus, an interacting group is an entity capable of forming a complex with one or more other entities. Applicants submit that one of ordinary skill in the art would understand what is meant by an “interacting group” upon reading the present specification.

*“First Tag Emits Light,” “Second Tag Can Accept the Energy from the First Tag”*

Second, the Examiner asserts that the phrases “first tag emits light” and “second tag can accept the energy from the first tag” are unclear since the second phrase is broader than the first. Without conceding the merits of this rejection, Applicants have amended claim 3 to recite that the first tag emits a “first energy” that the second tag can accept the first energy from the first activate tag. Applicants submit that it would be clear to one of ordinary skill in the art that the activated tags recited in claim 3 are capable of producing energy.

*“An Appropriate Substrate or Energy Source to Activate the Tags in i) and ii)”*

Finally, the Examiner asserts that the phrase “an appropriate substrate or energy source to activate the tags in i) and ii)” is unclear. Without conceding the merits of this rejection, Applicants have amended claim 3 to delete recitation of this phrase. Applicants submit that one of ordinary skill in the art would understand what is meant by the energy source recited in currently amended claim 3.

In light of the above remarks, Applicants respectfully request that the rejections under 35 U.S.C §112, second paragraph, be withdrawn.

Applicant : Karin A. Eidne et al.  
Serial No. : 10/580,130  
Filed : May 4, 2007  
Page : 13 of 13

Attorney's Docket No.: 21004-  
0002US1 / SJB:JBD:FP23821

In light of the present amendments and remarks, Applicants submit that the present application is in condition for allowance, and respectfully request a notice to that effect. If the Examiner feels that it would further prosecution or expedite allowance of the present case, he is invited to telephone the undersigned at 612-766-2071.

Please apply extension of time fee and any other applicable charges, or credit any overpayments, to deposit account No. 06-1050, referencing Attorney Docket No. 21004-0002US1.

Respectfully submitted,

Date: June 5, 2009

/Cameron M. Luitjens/

Cameron M. Luitjens, Ph.D., J.D.  
Reg. No. 58,674

Fish & Richardson P.C.  
60 South Sixth Street  
Suite 3300  
Minneapolis, MN 55402  
Telephone: (612) 335-5070  
Facsimile: (877) 769-7945